PAKISTAN TOBACCO COMPANY

ALLIANCE FOR WATER STEWARDSHIP

AKF - Site Water Stewardship Performance

Journey of Water Stewardship

FIT | FOR | GROWTH

Driving increase in Water Recycling

2020

93,210 m3
Water Withdrawn

38%
Water Recycled

AWS
Certification

41.1 %

10 %

Multi-Stage
Recycling

2024

54,872 m3
Water Withdrawn

48%
Water Recycled

Effluent Treatment
Plant Avenues

Shifting focus from Recycling to Conservation

2024

Target	Actual
59,087	54,872

Withdrawn

Target	Actual
45.9%	48%

Recycled

L3 Monitoring
GLT

Above Ground
Water Pipeline

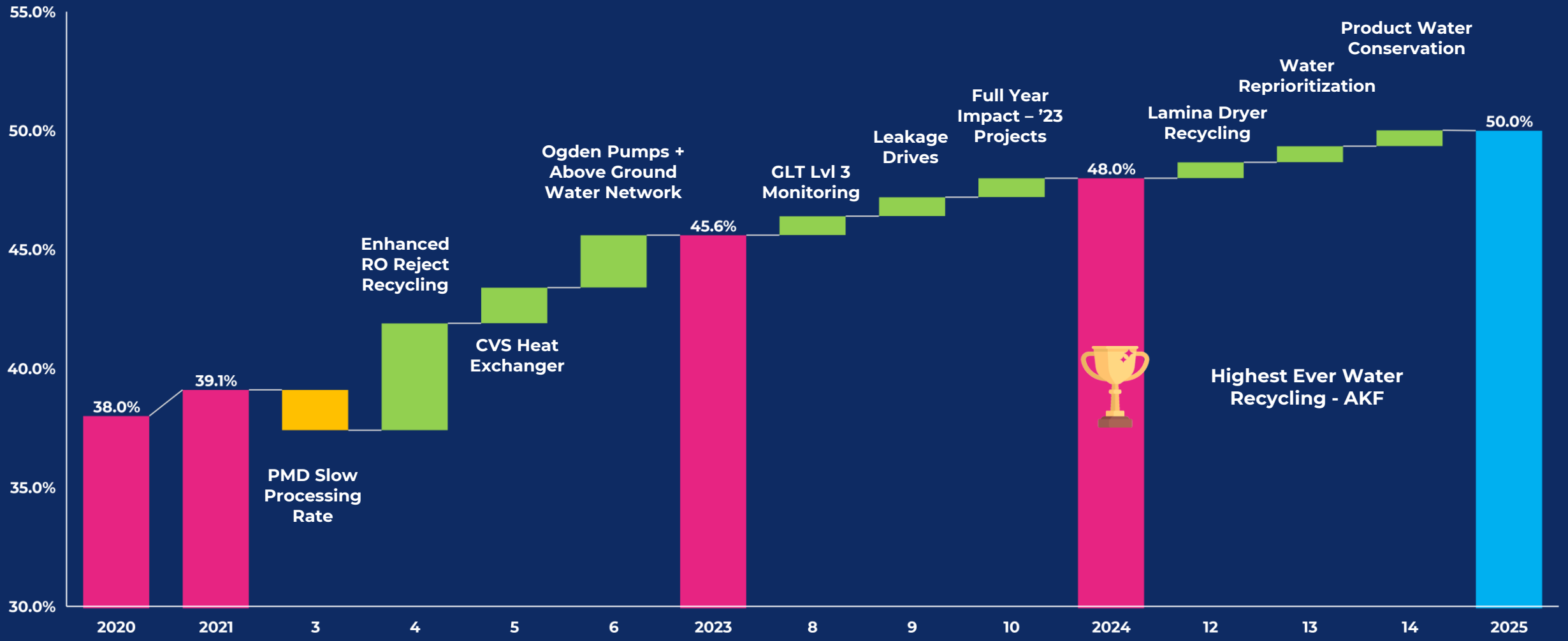
RO Reject
Utilization

2025

MAXIMIZE WATER WITHDRAWN REDUCTION THROUGH
RE-USE INITIATIVES PERTAINING TO PRODUCT WATER

AMBITION TO BE #1 IN WATER RECYCLING

Water Recycling Journey



SPEARHEADING THE WATER AGENDA – PLACING AKF IN TOP 5 BAT WATER SITES

4.1.1 Performance against targets in the site's water stewardship plan

PTC Akora Khattak Factory - Water Stewardship Plan								
Action	**Timeframe**	**Monitoring**	**Action Linkage**	**Target**	**Scope**	**AWS Outcome**	**Achieved**	**Status**
Identification of Best Practices Related to Water Stewardship through engagements with stakeholders, suppliers and other End Markets	Cont.	NA	Shared Water Challenge: Lack of Awareness, Poor Water Management, Pollution of Water Resources	Improved Water Stewardship	Internal	All Outcomes	Improved Water Stewardship	Cont.
Establishment of Maintenance and Cleaning regime of Drinking Water Supplies	Cont.	Monitoring through inspection checklist	Water Risk/ Shared Water Challenge	PEQS Compliance	Internal	Good Water Quality Status	Compliant	Cont.
Monitoring and Tracking of Soil and Grounwater Protection Policy	Cont.	Monitoring through inspection checklist	Water Risk	PEQS Compliance	Internal	IWRAs Good Water Quality Status	Compliant	Cont.
Deployment of Legal Register to monitor and track compliance to Water Related Laws	Cont.	Annual Review/Based on change in law	Water Risk	Compliance & Monitoring	Internal	All Outcomes	Compliant	Cont.
Clean up Drives for IWRAs	Cont.	NA	Shared Water Challenge: Pollution of Surface Water	Preservation and Upkeeping of IWRAs	External	Good Water Governance WASH IWRAs	Preservation and Upkeeping of IWRAs	Cont.
AWS Awareness Session	Cont.	NA	Shared Water Challenge: Lack of Awareness, Poor Water Management	Awareness Initiative	External	All Outcomes	Improved Water Stewardship	Cont.
Collaboration with NGOs	Cont.	NA	Shared Water Challenge: Lack of Awareness, Poor Water Management	Improved Water Stewardship	External	All Outcomes	Improved Water Stewardship	Cont.
Vaccination of Cholera & Typhoid	Cont.	NA	Imrproved WASH Condiitons	Prevention of water-borne diseases	Internal	WASH	Onsite Vaccination Drive conducted	Cont.
Key Stakeholder Engagement and onboarding	Cont.	NA	Shared Water Challenge: Lack of Awareness, Poor Water Management	Improved Water Stewardship	External	All Outcomes	Improved Water Stewardship	Cont.
Maintenance and Quality Monitoring of Filtration Plants Installed in the Catchment by PTC	Cont.	Maintenance Program via 3rd party vendor	Shared Water Challenge: Inadeqaute Maintenance of Filtration Plants	Protection of IWRA	External	IWRAs	Improved Water Governance, Quality and IWRAs	Cont.
Provision of adequate Washroom facilities for all employees	Cont.	Daily Cleaning Checklists	Imrproved WASH Condiitons	Factories Act 1934 Compliance	Internal	WASH	Compliant	Cont.
Condensate recovery network to be expanded and optimized in GLT	2024	Tracking of Water Consumption in DDS	Water Opportunity	2541 m3 Water Savings	Internal	Water Balance	7478 m3 of condensate currently being recovered	WIP
GLT level 3 metering	2024	Tracking of Water Consumption in DDS	Water Opportunity	Water visibility + data analysis	Internal	Water Balance	Increased visibility of data for loss mapping	Done
Lamina dryer discharge water recycling	2024	Tracking of Water Consumption in DDS	Water Opportunity	10m3 fresh water saving per day estimated during GLT season	Internal	Water Balance	WIP	WIP

4.1.1 Performance against targets in the site's water stewardship plan

PTC Akora Khattak Factory - Water Stewardship Plan								
Action	**Timeframe**	**Monitoring**	**Action Linkage**	**Target**	**Scope**	**AWS Outcome**	**Achieved**	**Status**
Hydrological Study of the Catchment to be conducted	2024	Report Received post Study	Shared Water Challenge: Lack of Awareness	Understanding of Water-Related Performance & Risks in Catchment	External	All Outcomes	Identification of Water Statitics, Quality and Shared Challenges of Catchment	Done
Provision of household water filters in akora mosque and police station	2024	Engagement with Mosque Stakeholders	Shared Water Challenge: Depleting Water Table, Poor Water Management	Reduction in Water Wastage	External	Good Water Governance Sustainable Water Balance WASH IWRAs	WIP	WIP
Deployment of Signs & Signages in Catchment	2023	Engagement with Mosque Stakeholders	Shared Water Challenge: Lack of Awareness	Awareness Initiative	External	Good Water Governance WASH IWRAs	Improved Water Stewardship	Cont.
Provision of household water filters in Akora community for minorities	2024	Engagement with Akora minorities Stakeholders	Shared Water Challenge: Lack of Awareness	Provision of Safe Drinking Water	External	Good Water Governance WASH	Planned	Planned
Construction of drain in akora community	2024	Engagement with Mosque Stakeholders	Shared Water Challenge: Poor Water Management	Provision of Drinking Water	External	Good Water Governance Good Water Quality Status WASH	WIP	WIP
Maintenance and repair of community washrooms	2024	Engagement with Mosque Stakeholders	Shared Water Challenge: Pollution of Water Resources	Provision of Clean Drinking Water	External	Good Water Governance Good Water Quality Status WASH	WIP	WIP
Industrial Dishwasher Installation	2025	Tracking of Water Consumption in DDS	Water Opportunity	400 M3 Water Reduction Annually	Internal	Good Water Governance Sustainable Water Balance WASH	Planned	Planned
Under Water pipe Lines to be replaced with Above Ground Lines (Factory)	2022	Tracking of Water Consumption in DDS	Water Opportunity	10,000 m3 reduction overall	Internal	Good Water Governance Sustainable Water Balance	9722 m3 reduction (Phase 1 - YTD 2024) Phase 2 planned	WIP
Installation of Filtration Plant in Catchment	2025	Spot Check post Implementation	Shared Water Challenge: Pollution of Water Resources	Provision of Clean Drinking Water	External	Good Water Quality Status	Provision of Clean Drinking Water	WIP
Afforestation Campaign in Catchment	Cont.	Collaboration with NGOs and CSOs	Shared Water Challenge : Water Balance	333,607 Saplings	External	Good Water Governance, IWRAs	More than 350K saplings planted in this year in the catchment	Cont.
Procurement and Installation of New Fire Hydrant Pump	2025	Fire Infrastructure Compliance	Water Governance	Compliance Project	Internal	Good Water Governance, IWRAs	Planned	Planned
Publish Hydrological Study of Catchment based on stakeholder's feedback	2025	Platform Engagement	Shared Water Challenge: Lack of Awareness	Understanding of Water-Related Performance & Risks in Catchment	External	All Outcomes	Planned	Planned
Collaboration with PHED on WASH and Water Governance	2025	Community Impact	Shared Water Challenge: Lack of Awareness, Poor Water Management	Improved Water Stewardship	External	All Outcomes	Planned	Planned

1.2.1 : Stakeholders and their Water Related Challenges

Sr.No	Shared Challenge	Impact	Likelihood	Prioritization	Actions	Key Players
1	Potential Contamination of groundwater from surface water pollution	High	High	High	Deployment of Onsite Effluent Treatment Plant - **G** Infrastructure modification to ensure minimal Wastewater Discharge from Site - **G** Soil and Groundwater Protection Plans to be made- **G** Sewage Treatment Plant in Catchment- **R** Collaboration with NGOs for CSR Projects – **G** Clean up Drives for Surface Water Sources – **G**	1. Municipal Committee 2. DC 3. AC
2	Deficiency of regulations and groundwater modeling tools	High	Medium	Medium	Deployment of Onsite Effluent Treatment Plant - **G** Infrastructure modification to ensure Zero Wastewater Discharge from Site - **G** Soil and Groundwater Protection Plans to be made- **G** Sewage Treatment Plant in Catchment- **R** Deployment of Filtration Plants in Communities- **A** (on going project) Year-on-Year reduction in water withdrawn through multiple water recycling projects - **G**	1.Municipal Committee 2. DC AC
3	Weak institutional framework in the water sector	High	Low	Medium	Water Withdrawal Monitoring of site - **G** Hydrological Study - **G** Hydrological study sharing with key players to inform them of water prone catchment challenges – **G** Awareness sessions on responsible water usage both on site and in the catchment- **G** Water conservation initiative awareness for eg Alternate Furrow– **A** (on going project) Enable Tree Plantation – **G**	1. MC 2. DC 3. EPA
4	Land use change in terms of industrialization & urbanization in area, resulting in decreasing recharge area.	Medium	Medium	Medium	Organization of promotional and information campaigns for the local community, farmers, BAT employees, subcontractors regarding the value of water, broadly understood wastewater management and good practices in water management- **G** Year-on-Year reduction in water withdrawn through multiple water recycling projects, currently the site is at 48% water recycling ratio - **G**	1. Local farmers Local community 2. BAT employees and subcontractors
5	Groundwater Depletion & Insufficient water storage capacity.	High	Low	Medium	Water Infrastructure of Site has a Maintenance Regime - **G** Year-on-Year reduction in water withdrawn through multiple water recycling projects, currently the site is at 48% water recycling ratio - **G** **Opportunities:** Development of Infrastructure Maintenance Regime of Catchment Water Sources	1. DC 2. Municipal Committee
6	Effluent disposal in ponds and seepage boreholes in villages.	High	High	High	Identification of good practices related to water and wastewater management that may be applicable to the BAT catchment area and the factory itself. Collaboration with stakeholders in the implementation of identified good practices in the catchment area, the implementation of which is technically feasible and economically rational. Replication of identified good water management practices in the factory-**G** (continuous)	All Stakeholders
7	Lack of data availability regarding groundwater pumping in the city surroundings and its impact on water table.	High	High	High	Awareness Sessions – **G** Share Hydrological Study Report with Stakeholders – **G** Further engagement with Public Health Engineering Department - **A**	All Stakeholders
8	Public Perception as a Water Steward	High	High	High	Maintenance of drains within site and development of drains in catchment– **G** Engagement for awareness both at public and business level - **G**	

Shared Challenges

S.No	Shared Challenge	Impact	Likelihood	Prioritization	Initiatives	Key Players
9	Pollution of Surface Water	High	High	High	Deployment of Onsite Effluent Treatment Plant - G Infrastructure modification to ensure Zero Wastewater Discharge from Site - G Soil and Groundwater Protection Plans to be made- G Sewage Treatment Plant in Catchment- R Collaboration with NGOs for CSR Projects – G Clean up Drives for Surface Water Sources – G	1. AC / DC
10	Pollution of Groundwater	High	Medium	Medium	Deployment of Onsite Effluent Treatment Plant - G Infrastructure modification to ensure Zero Wastewater Discharge from Site - G Soil and Groundwater Protection Plans to be made- G Sewage Treatment Plant in Catchment- R Deployment of Filtration Plants in Communities- A (on going project) Deployment of Highly Absorptive Filtration Plants on Site- G	2. AC / DC
11	Depleting Water Table	High	Low	Medium	Water Withdrawal Monitoring of site - G Hydrological Study - G Awareness sessions on responsible water usage both on site and in the catchment- G Identification and sharing of Drip Irrigation Practices/Learnings – A Water table depth monitoring on site. Water recycling initiatives taken to reduce water withdrawn - G Enable Tree Plantation – G	1. DC 2. EPA
12	Inadequate Maintenance of Water Filtration Plants	Medium	Medium	Medium	Organization of promotional and information campaigns for the local community, farmers, BAT employees, subcontractors regarding the value of water, broadly understood wastewater management and good practices in water management- G Maintenance and operation of PTC's own Filtration Plants– G Water quality monitoring of PTC's own Filtration Plants to ensure water quality compliance - G	1. Local farmers Local community 2. BAT employees and subcontractors
13	Piping and sanitation network Infrastructure Failure	High	Low	Medium	Water Infrastructure of Site has a Maintenance Regime **Opportunities:** Development of Infrastructure Maintenance Regime of Catchment Water Sources	1. AC / DC 2. Municipal Committee 3. EPA 4. Site Contractor
14	Poor Water Management	High	High	High	Identification of good practices related to water and wastewater management that may be applicable to the BAT catchment area and the factory itself. Collaboration with stakeholders in the implementation of identified good practices in the catchment area, the implementation of which is technically feasible and economically rational. Replication of identified good water management practices in the factory- A (on going project)	All Stakeholders
15	Lack of Awareness	High	High	High	Awareness Sessions – G Share Hydrological Study Report with Stakeholders – G	All Stakeholders

NO WATER RELATED COMPLIANCE VIOLATION BY PTC AKF TILL DATE

Effluent Treatment Plant

17 m3/Hr.
ETP Treatment Capacity

51%
Of Total Water Withdrawn

combines all elements of the activated sludge purification process into a single compact unit

Treated Water Quality

PH 6-9
BOD < 80 mg
COD < 150mg/L
TSS < 200mg/L

Compliant to NEQS Standards

Fire Hydrants

Toilets

Garden

Solar Cleaning

AHU Recirculation + Cleaning

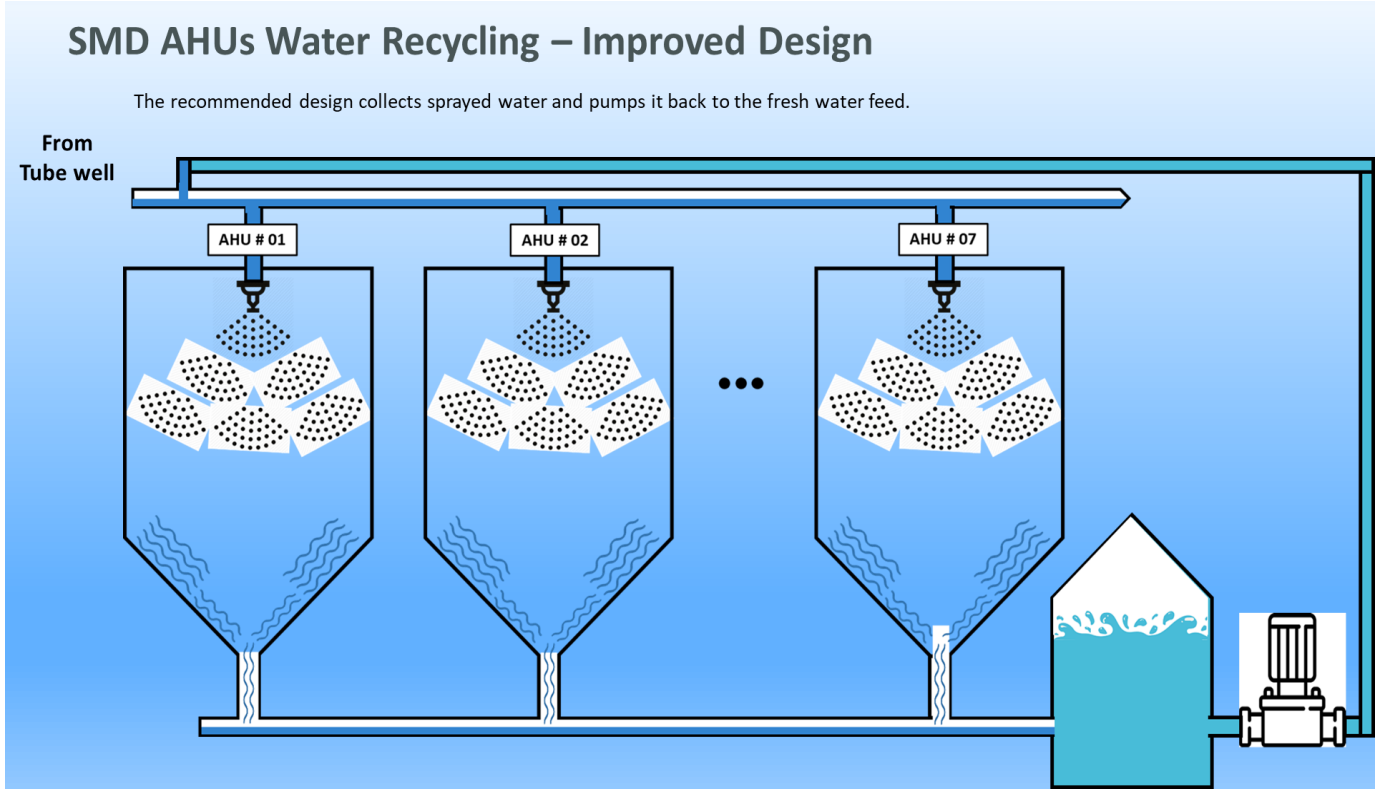
Initiative Brief

Closed loop HVAC Air Handling Units (AHUs) Recirculation

Description

Initially fresh water was being utilized in AHUs for humidification purposes within an open loop cycle. The recirculation mechanism was transformed to a closed loop one utilizing RO Rejected Water.

The same RO Rejected water is also being utilized for AHU cleaning instead of fresh water.



15% Contribution to Total Water Recycled

Above Ground Water Pipelines

Residential Area
Phase-1 (‘22)

Factory Area
Phase-2 (‘23)

17% Reduction
Water Withdrawn 2024 YTD vs SPLY

- Eliminating unaddressed lines losses
- Enabling preventive maintenance
- Reducing exposure to contaminants

Condensate Recovery

7000+

Water Saving
$m3$ – 2024 YTD

26%

Steam Recovered
2024 YTD

1. Replacement of damaged condensate recovery Ogden pumps with high temp/pressure centrifugal pumps
2. Construction of header storage tank to ensure maximum recovery of steam condensate.
3. Installation of automation mechanism for auto operation of condensate transport to boiler infeed
4. Thorough inspection and replacement of steam traps post need analysis
5. Condensate leakage identification and rectification drive within and outside steam consumption centers.

RO Reject Utilization

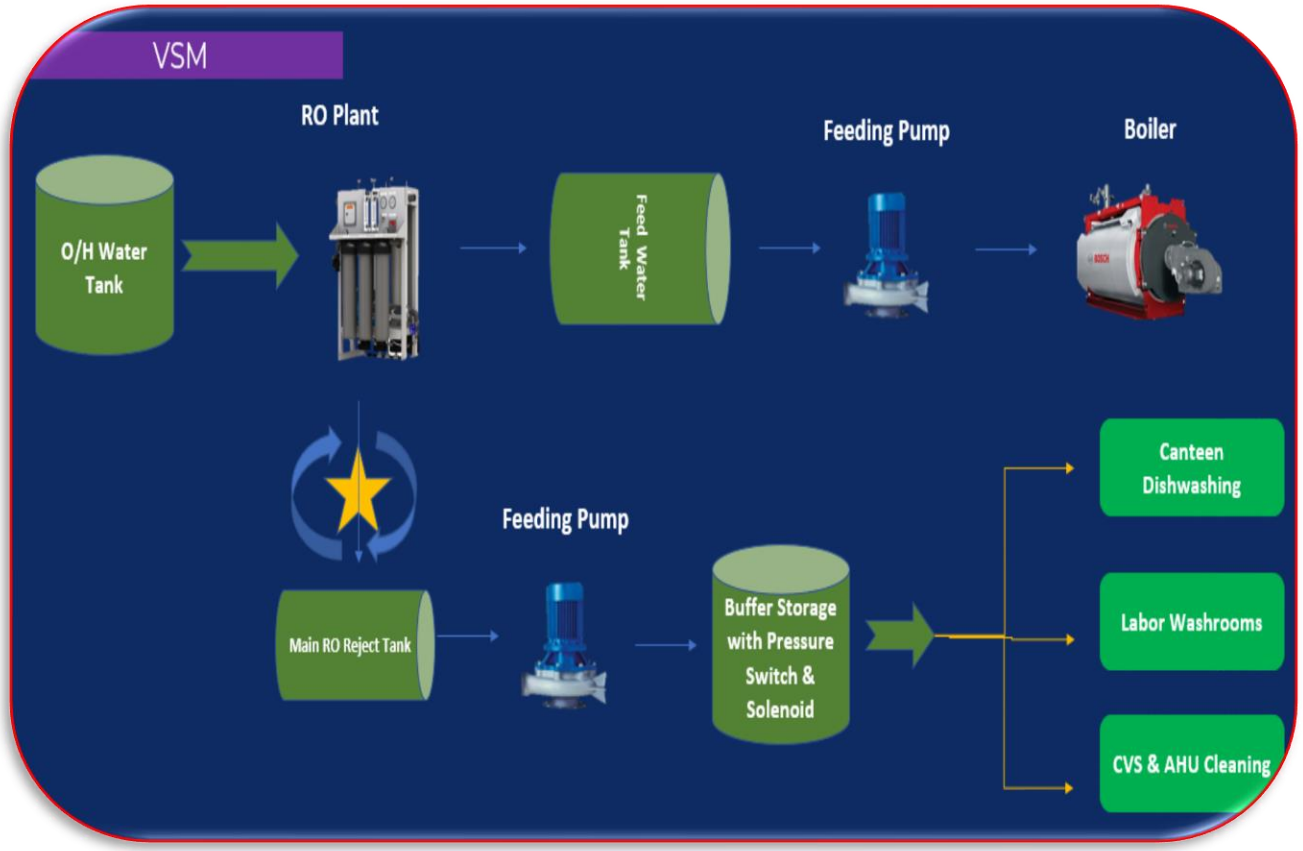
Initiative Brief

Boiler RO reject water utilized for

1. PMD Cleaning
2. Labor washrooms
3. Canteen Dish Washing
4. CVS Cleaning

Description

There are certain parameters that need to be complied to for boiler infeed water. a reverse osmosis (RO) plant is installed to distill the raw water and lower the hardness property of water. The RO plant rejects a certain quantity (25%) which contains slightly higher hardness of water. This RO Rejected water was being wasted. RO rejected water routed to PMD cleaning, Canteen Dishwashing, Labor Washrooms and for CVS cleaning via a buffer storage coupled with an automation mechanism for utilization where fresh water was previously being used



Benefit

1. PMD = 0.1% Contribution
2. Canteen & Labor Washrooms = 5.5% Contribution
3. CVS Cleaning = 5% Contribution

Water Filter Plant Upgradation

PAKISTAN TOBACCO COMPANY

Selenium Reduction

0.041 mg/L

0.005 mg/L

To ensure sustainability and performance, chemically enhanced backwash of filter membrane in addition to simple backwashing after every 24hr.

Reduction of Selenium and Arsenic content in drinking water through a highly Absorptive Activated Alumina Media

Mist & Sensor Taps Installation

Water Withdrawn Reduction

45.5%

Mist Nozzles

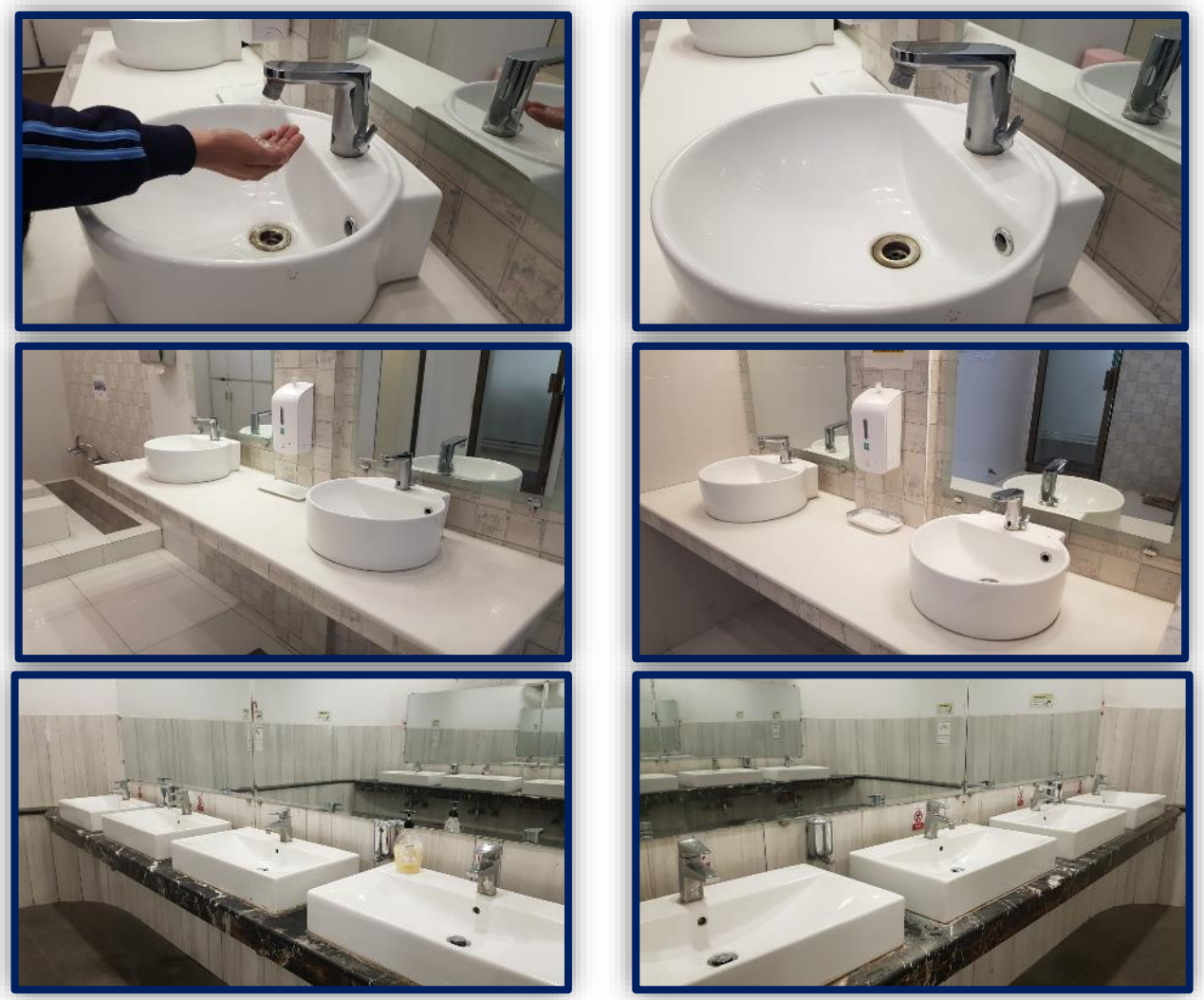
41%

Sensor Taps

69.5%

Combination

Hygiene Improvement: Sensor taps, activated by motion, eliminate the need for physical contact, reducing the risk of cross-contamination and spreading germs



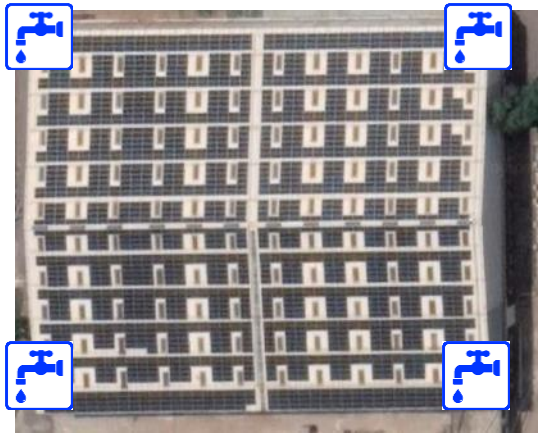
Treated Water for Solar Panel Cleaning

- Total number of panels: 2,244
- Total no. of roofs: 02 (High roof & L-17/ 18)
- Method of cleaning: Telescopic Aluminum brush with water hose connections
- 8 Water connections - given in each corner of both roofs with water hoses kept in hose boxes

Water Pump for water points on the roof

Water connections on the roof

Water Hose Boxes fixed on roofs

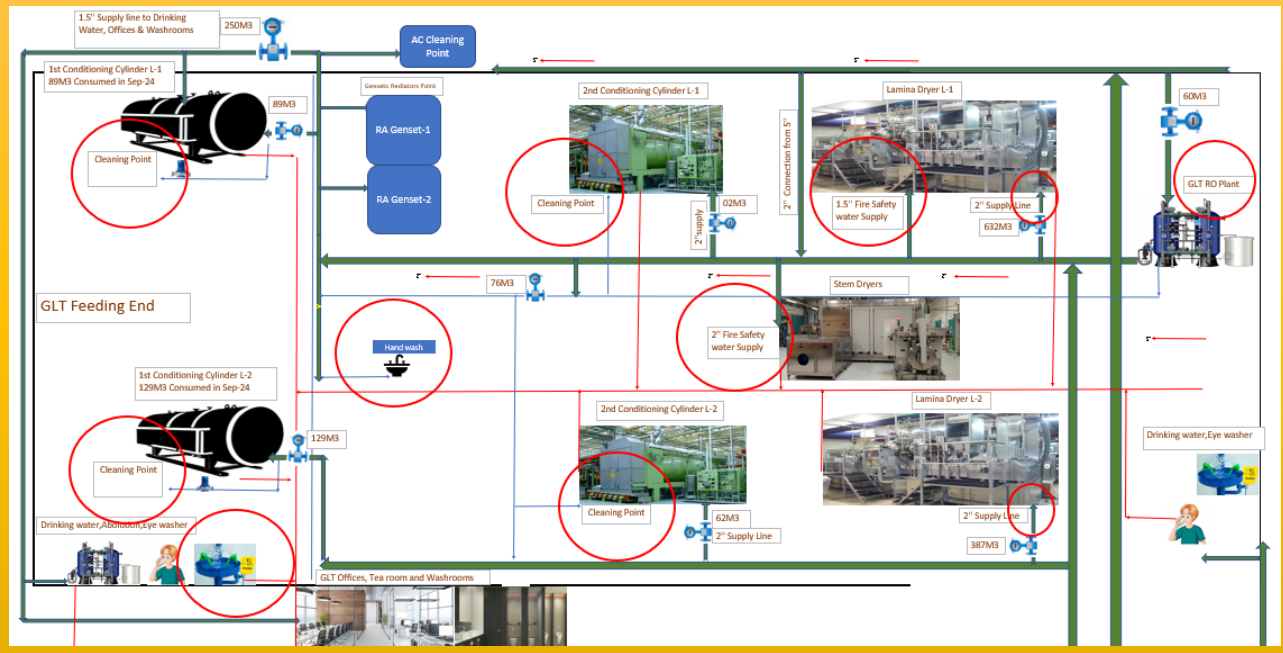


High Roof: 1,839 Panels

L-17/18: 405 Panels

GLT Level 3 Metering

- Advanced visibility of water consumption in GLT
- 9 Flow Meters Installed
- Daily data analysis for loss identification



Opportunities Identified

- Line Rerouting
- Water Source Shift to Conserve Water
- Lamina Dryer Recycling Opportunity
- Root Cause Identification
- Additional Metering Identification

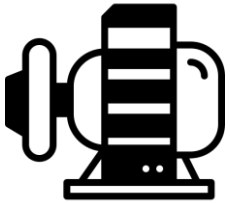
GLT Lamina Dryer Recycling

GLT Water Consumption

▪ GLT Office Tea ROOM ▪ 1st CC CylinderLine 1 ▪ 1st CC CylinderLine 2 ▪ 2nd CC Cylinder Line 1 ▪ 2nd CC Cylinder Line 2 ▪ **Lamina Dryer Line 1** ▪ **Lamina Dryer Line 2** ▪ RO Plant / Washing Points ▪ Washing

Lamina Dryer

Collection Tank



Cleaning Points

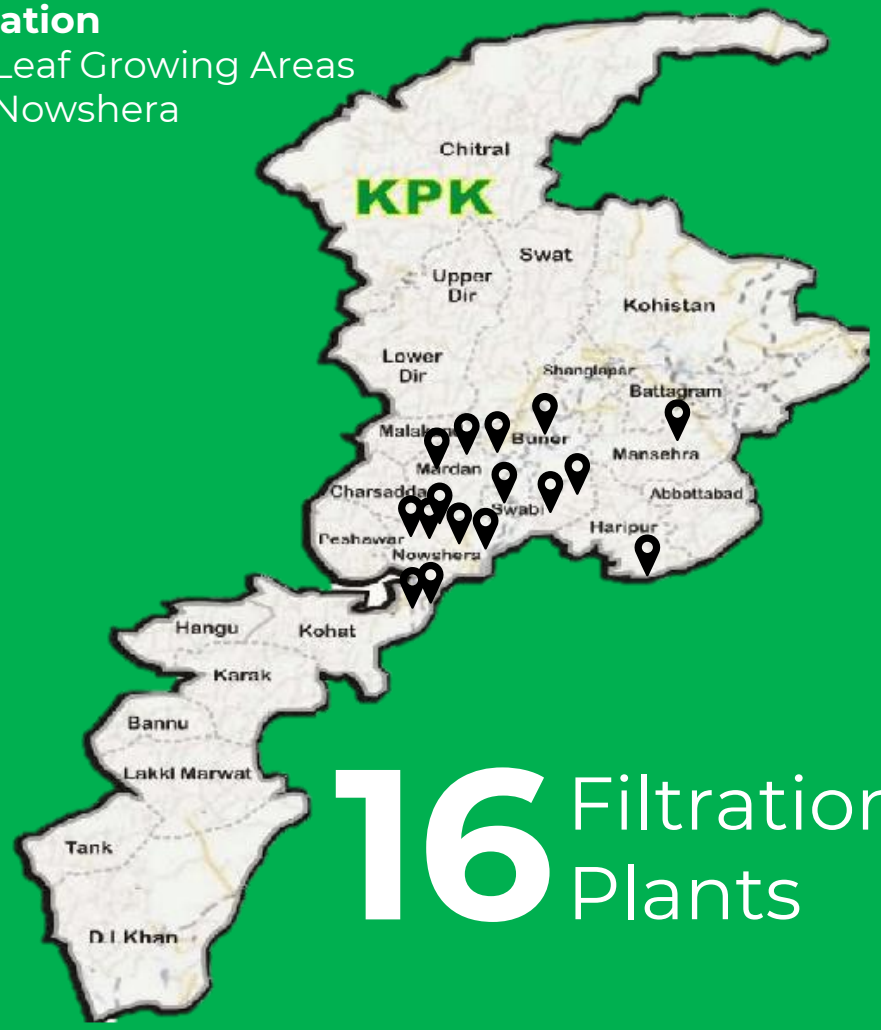
10 m3 / day

Estimated Saving

Provision of **Water Filtration plants**

Location

- Leaf Growing Areas
- Nowshera



16 Filtration Plants

DATE 14-Sep-21
PAGE NO. 04

The Frontier Post

Two water filtration plants inaugurated

DATE 14-Sep-21
PAGE NO 11

BUSINESS RECORDER

PTC inaugurates water filtration facilities

Annual Afforestation

Annual Afforestation campaign in leaf Areas.

1.42

Million Saplings Distributed

5

Leaf Regions Covered

Aerial Seeding

Aerial Seeding on protected Forest Reserve

700

Acres of Protected Forest

16

Million Seeds Dispersed

In first of its kind activity in the BAT world, PTC dispersed 16 million seeds of indigenous species over 700 Acres of protected forest reserve though aerial seeding.
16 Million seeds dispersed till date.
The project was executed in 2021.

Water Stewardship Initiatives

Enabling Governmental Stakeholders

*The site has **shared** the **Hydrological Study Report** of the catchment area with **key governmental Stakeholders** to enable them to take steps to mitigate the water related risks in the area. This initiative is an important step in onboarding the **Key Players** in the catchment.*




Water Stewardship Initiatives

Awareness Session

Education & Awareness

- ***AWS Vision & outcomes***
- ***Good Water Governance***
- ***Sustainable Water Usage***
- ***Sanitation & Hygiene***
- ***IWRAs Maintenance***
- ***Water Quality Issues***

Feedback

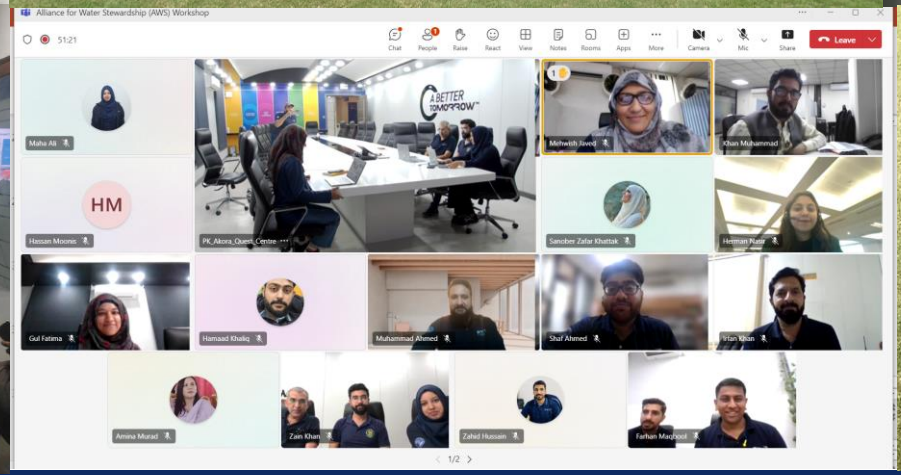
- ***Stakeholders provided feedback to PTC***
- ***Stakeholders shared inputs on water improvements***
- ***Best Practices and learnings shared***

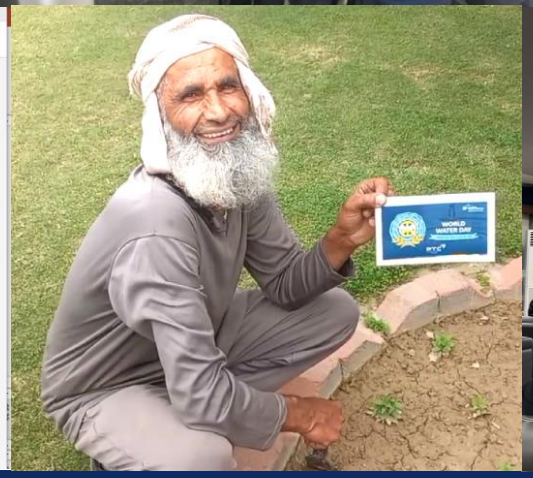
Collective Effort

- ***Collaboration between PTC, NGO and General Public***
- ***Pledge to work towards a common goal: Saving Water***

Water Stewardship Initiatives

Engagements & Awareness Session





Water Stewardship Initiatives

Public Awareness

WASH Campaign *was carried out to aware people of the home water treatment practices and water saving guidance in their daily activities*

Hospital Akora

Academy Sheedo

Girls School Sheedo

Water Tank Isori

Girls School Jahangira

Mosque Isori

Water Stewardship Initiatives

Door to Door Public Engagements

- *Engagement with residents and community members*
- *Identification of Water Related challenges faced by the Stakeholders*





Water Stewardship Initiatives

Clean Up Drive

Being a responsible water steward, PTC Akora Khattak Factory to execute a ***clean-up drive*** *on the* ***River Kabul****.*

The Kabul River is an Important Water Related Area in the catchment

Unfortunately, the maintenance of the IWRA is poor. PTC participated in and enabled the clean-up drive to ***spread awareness*** *regarding* ***IWRAs maintenance****.*

Pakistan | FSM – Farm Monitoring Process & Monitoring

PTC
PAKISTAN TOBACCO COMPANY

10k Farmers

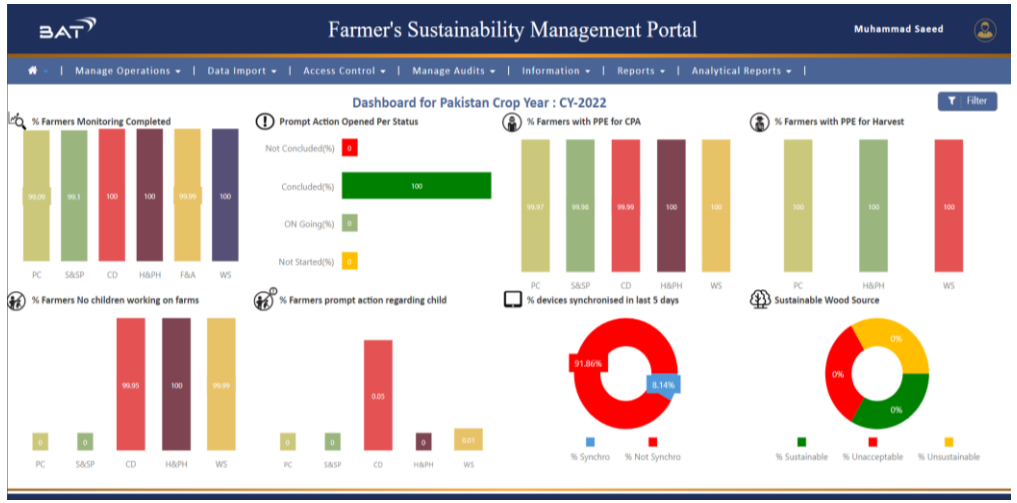
780 Questions

6 Modules

115+ Staff

Thrive

wf



100% Farm Monitoring

3,300 (33%)
Farmers only in Catchment Area

Field Technicians

AGMs; RGMs; Sustainability; Admins

Treated Water is used in Gardens

All the Factory Gardens are being watered with Treated water which eventually seeps in the soil.

Total Area of 19.52 Acre is covered with gardens inside the factory, out of which 12-acre area is for RA and 5.52 Acre is in Factory Area.

Total Area is of Factory is 56 Acre and 17.5 Acre consists of Gardens which is
More than 30% Area Covered with Gardens

Gardens are watered on Daily basis which means overall **2851200 Gallons** of water is utilized every week.

30%
Area Covered with

2851200 gallon
Gallons Water Consumption per Week

Farmer Capacity Building | Cluster Meetings

PTC PAKISTAN TOBACCO COMPANY

talkingpoints Nov/Dec 2024

Cluster Meeting Talking Points

Communicate to all Team members

PTC PAKISTAN TOBACCO COMPANY

Crop Protection & Irrigation

Crop Production

- Suitable Recommended Varieties
- Float Seedling Production
- Seedbed Weed & disease management
- Seedbed Irrigation & plastic management
- Crop expansion: (Increasing Unit plantation, Quality Parameters, Industry requirement)
- Laser land levelling

Environmental Excellence

Biodiversity Operational Standards
- Tobacco cultivation on deforestation free land
- No Natural ecosystem Conversion for tobacco plantation
- No tobacco plantation near or adjacent to High biodiversity areas
- Afforestation on Farm

Soil & Water Management on Farm
- Soil Conservation (Green Manuring)
- Water Channels Cleaning

Safety at Farm
- Use of recommended CPAs & Safe storage
- Record of CPAs used
- PPEs Availability & Use of PPEs for CPA Application
- Safe disposal of CPA containers/Polythene Bag/Plastic Stick

Wood Traceability
- Keeping record of Wood purchased

Positive Social Impact

Child Labour elimination & Forced Labor
- Awareness & education on avoiding child labor & Forced Labor

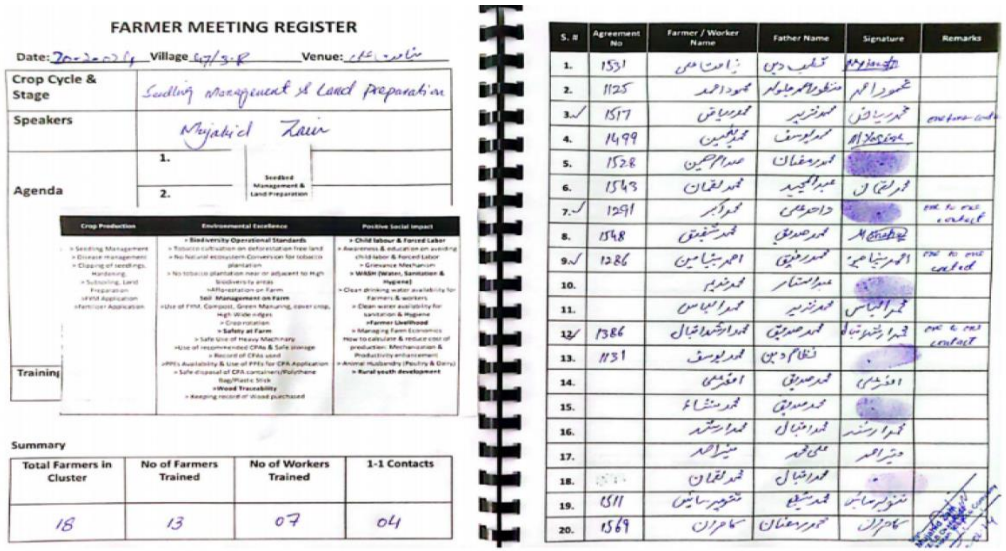
WASH (Water, Sanitation & Hygiene)
- Clean drinking water availability for Farmers & workers
- Clean water availability for sanitation & Hygiene

Farmer Livelihood
- Managing Farm Economics
- How to calculate & reduce cost of production: Mechanization & Productivity enhancement
- **Crop Diversification** (Other Crops, Mushrooms Cultivation & Kitchen gardening)
- Animal Husbandry (Poultry & Dairy)

ABAC / AFC Awareness

100%

Farmers covered almost every month



FARMER MEETING REGISTER

Date: Village: Venue:

Crop Cycle & Stage	Seedling management & Land preparation
Speakers	Mujahid Zain
Agenda	1. Seedbed Management & Land Preparation 2.
Training	

Summary

Total Farmers in Cluster	No of Farmers Trained	No of Workers Trained	1-1 Contacts
18	13	07	04

S. #	Agreement No	Farmer / Worker Name	Father Name	Signature	Remarks
1.	1531				
2.	1125				
3.	1517				
4.	1499				
5.	1528				
6.	1543				
7.	1291				
8.	1548				
9.	1286				
10.					
11.					
12.	1386				
13.	1131				
14.					
15.					
16.					
17.					
18.					
19.	1511				
20.	1569